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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/480,409	01/11/2000	ANANTH DODABALAPUR	19-2-16-18	4284

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EXAMINER

NGUYEN, PHILLIP

ART UNIT	PAPER NUMBER
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2828

DATE MAILED: 08/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/480,409

Applicant(s)

DODABALAPUR ET AL.

Examiner

Phillip Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-18 have been considered but are moot in view of the new ground(s) of rejection.

Double Patenting

2. Claims 2-3 of this application conflict with claims 10-11 of Application No. 09/480409. 37 CFR 1.78(b) provides that when two or more applications filed by the same applicant contain conflicting claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason for their retention during pendency in more than one application. Applicant is required to either cancel the conflicting claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP § 822. It is noted that both of the claims recite the device comprising a laser.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-6 and 8-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakata et al. ('187) in view of Tsunetomo et al. ('256).

Regarding claim 1, Sakata discloses in Figure 10 an article comprising an optical device 118, optically coupled to the device, an optical coupler 119 for receiving light input from the device and outputting light in at least one discrete direction wherein the optical coupler comprising a core region 114 disposed between two cladding regions 104 and 112 except for the core region having a two-dimensional photonic crystal grating. Tsunetomo discloses in Figures 3d, 3e, and 6 a two-dimensional photonic crystal grating. For the improvement of the article, it would have been obvious to one skilled in the art at the time the invention was made to provide a core with a two dimensional photonic crystal grating as taught by Tsunetomo to Sakata in order to have the outputting beam in at least one discrete direction.

Regarding claims 2 and 10, Sakata further discloses the device being selected from either DFB laser or DBR laser (col. 8, lines 45-48).

Regarding claims 3 and 11, Sakata discloses the device is an optical waveguide device and the coupler is integrated on the same waveguide 102 as the device.

Regarding claim 4, since the cladding 112 is in the outside of the coupler, it comprises air.

Regarding claim 5, Tsunetomo also discloses a cladding which disposed below the core region (grating) which comprises glass wherein glass is made of SiO₂.

Regarding claims 6 and 8, Tsunetomo discloses the core comprising organic material (col. 7, lines 64-67 and col. 8, line 1) and triangular latticed grating.

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Regarding claims 9 , 12 and 13, since Sakata discloses the lasers and couplers disposed on the same substrate, so the coupler in the middle of two lasers is ensconced within the lasers and therefore within at least two DBR mirrors and one dimensional gratings 115.

Regarding claim 16, Sakata discloses the device is selected from lasers fabricated with GaAs, AlGaAs (col. 5, lines 15-30).

Regarding claims 14 and 17, using quantum cascade laser or VCSEL in the article only involves the routine skill in the art.

Regarding claim 18, Sakata discloses an optical communication system using the article as recited in claim 1 (col. 1, lines 11-26).

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakata et al. ('187) in view of Tsunetomo et al. ('256) and further in view of Kozlov et al. ('902). Sakata and Tsunetomo disclose the claimed invention except for the core region having hydroxyquinoline aluminum doped with a laser dye. Kozlov discloses an organic laser having hydroxyquinoline aluminum doped with a laser dye (col. 3, lines 11-17). For the improvement, it would have been obvious to the one having ordinary skill in the art at the time the invention was made to provide a core region comprising having hydroxyquinoline aluminum doped with a laser dye as taught by Kozlov.

Citation of Pertinent References

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The patent to Sakata et al. discloses Multi-Wavelength Light Detecting and/or Emitting Apparatus having Serially Arranged Grating Directional Couplers, U.S. Patent No. 5233187

The patent to Tsunetomo et al. discloses Method for Manufacturing a Diffraction Type Optical Element, U.S. Patent No. 5910256

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the

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advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phillip Nguyen whose telephone number is 571-272-1947.

The examiner can normally be reached on 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MINSUM HARVEY, can be reached on 571-272-1835. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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MINSUN OH HARVEY
PRIMARY EXAMINER